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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/711,923	10/13/2004	Liang Tang	137291XT (GEMS0218PA)	5922
61604	7590	08/10/2007	EXAMINER	
PETER VOGEL			ARTMAN, THOMAS R	
GE HEALTHCARE				
3000 N. GRANDVIEW BLVD., SN-477				
WAUKESHA, WI 53188			ART UNIT	PAPER NUMBER
			2882	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/711,923	TANG, LIANG
	Examiner	Art Unit
	Thomas R. Artman	2882

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 11 July 2007.
- 2a) This action is FINAL.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-20 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) 5,8 and 20 is/are allowed.
- 6) Claim(s) 1-4,6,7 and 10-19 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 13 October 2004 is/are: a) accepted or b) objected to by the Examiner.
 

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) Notice of Informal Patent Application
- 6) Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-4, 6, 7 and 10-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 11 and 19 recite the limitation "each pair of said plurality of high voltage elements" in line 3 of all three claims. There is insufficient antecedent basis for this limitation in the claim.

Claims 2-4, 6, 7, 10 and 12-18 are rejected under this section by virtue of their dependency.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 6, 7 and 10-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Wirth (US 5,132,999).

Regarding claim 1, Wirth discloses a cathode circuit for an imaging tube (Fig.2), including:

- a) a plurality of high voltage elements (including items 49, 50 and 52), and
- b) at least one voltage clamping device 59 coupled between a pair of the plurality of high voltage elements and preventing occurrence of overvoltage transients in the cathode circuit (col.2, lines 50-53; col.4, lines 27-46; col.5, lines 10-35).

With respect to claim 2, Wirth further discloses that the plurality of high voltage elements have a low operating voltage therebetween (49, 50 and 52 are connected together, and therefore essentially no voltage drop exists between the elements).

With respect to claims 3, 4 and 7, Wirth further discloses that the voltage clamping device is made of a resistive material, specifically, a metal oxide varistor (col.4, lines 43-46).

With respect to claim 6, Wirth further discloses that the voltage clamping device is a resistive jumper (Fig.2 and col.5, lines 10-24).

With respect to claim 10, Wirth further discloses that the voltage clamping device performs as an insulator when voltage potential between the plurality of high voltage elements is less than a predetermined differential voltage level (see above citations).

Regarding claim 11, Wirth discloses an imaging tube (Fig.2), including:

- a) a plurality of high voltage elements (leads connecting both ends of the voltage clamping device), and
- b) a voltage clamping device 58, 59 coupled between the plurality of high voltage elements and preventing occurrence of overvoltage transients in the imaging tube (col.2, lines 50-53; col.5, lines 10-35).

With respect to claim 12, Wirth further discloses:

- c) a driving circuit (34, 36, 51, 52), and
- d) a cathode 50 coupled to the driving circuit via the high voltage elements (Fig.2).

With respect to claim 13, Wirth further discloses:

- c) a driving circuit (34, 36, 51, 52), and
- d) a high voltage receptacle (Fig.2, place where leads 44 and 45 enter the envelope 18)

that is coupled to the driving circuit via the plurality of high voltage elements (Fig.2).

With respect to claim 14, Wirth further discloses that the plurality of high voltage elements exist within an imaging tube housing 55.

With respect to claim 15, Wirth further discloses that the plurality of high voltage elements are a plurality of high voltage leads (see part b of the rejection of claim 11).

With respect to claim 16, Wirth further discloses that the voltage clamping device allows current to flow between the plurality of high voltage leads when voltage potential between the plurality of high voltage leads is greater than a predetermined voltage level (col.2, lines 50-53; col.5, lines 10-35).

With respect to claim 17, Wirth further discloses that the voltage clamping device is made of a resistive material.

With respect to claim 18, Wirth further discloses that the voltage clamping device performs as an insulator when voltage potential between the plurality of high voltage elements is less than a predetermined differential voltage level (see above citations).

Claims 1, 6, 7, 10, 11 and 15-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Titterton (US 2,524,240).

Regarding claim 1, Titterton discloses a cathode circuit for an imaging tube (Figure), including:

- a) a plurality of high voltage elements (22, 23, 40, 27, 41), and
- b) at least one voltage clamping device (resistor at top of Figure, not labeled) coupled

between a pair of the plurality of high voltage elements and preventing occurrence of overvoltage transients in the cathode circuit (inherent in the function of the un-labeled resistor where tube discharge will take place rather than current flow through the resistor unless the

applied voltage exceeds the resistive ability of the resistor and current starts to flow in the resistor).

With respect to claim 6, Titterton further shows that the voltage clamping device is a resistive jumper (symbol for resistor, Figure).

With respect to claim 7, Titterton further shows that the voltage clamping device is formed of a resistive material (symbol for resistor, Figure).

With respect to claim 10, it is inherent in the function of the un-labeled resistor of Titterton that the voltage clamping device performs as an insulator when the voltage potential between the plurality of high voltage elements is less than a predetermined differential voltage level (Figure, see explanation in rejection of claim 1).

Regarding claims 11 and 15, Titterton discloses an imaging tube (Figure), including:

a) a plurality of high voltage elements (high voltage leads between un-labeled resistor and items 22, 23, 40 and 27), and

b) a voltage clamping device coupled between a pair of the plurality of high voltage elements and preventing occurrence of overvoltage transients in the imaging tube (inherent in the function of the un-labeled resistor where tube discharge will take place rather than current flow through the resistor unless the applied voltage exceeds the resistive ability of the resistor and current starts to flow in the resistor).

With respect to claim 16, it is inherent in the function of the un-labeled resistor of Titterton that the voltage clamping device allows current to flow between the plurality of high voltage leads when voltage potential between the plurality of high voltage leads is greater than a predetermined voltage level (Figure, see explanation in rejection of claim 11).

With respect to claim 17, Titterton further shows that the voltage clamping device is formed of a resistive material (symbol for resistor, Figure).

With respect to claim 18, it is inherent in the function of the un-labeled resistor of Titterton that the voltage clamping device performs as an insulator when voltage potential between the plurality of high voltage elements is less than a predetermined differential voltage level (Figure, see explanation in rejection of claim 11).

Regarding claim 19, Titterton discloses a cathode circuit (Figure) having a plurality of high voltage elements (35, 37, 39 and 40, for example) having at least one discharge gap with a predetermined width (col.3, line 66 through col.4, line 23) coupled between a pair of the plurality of high voltage elements, and discharging takes place across the discharge gap when a voltage potential across the discharge gap is greater than a predetermined voltage level (see above citation).

*Allowable Subject Matter*

Claims 5, 8 and 20 are allowed for reasons as stated in the previous Office action, dated September 22<sup>nd</sup>, 2006.

*Response to Arguments*

Applicants' arguments with respect to the 35 USC 102(b) rejections over Tanaka have been considered and are persuasive. The examiner agrees that the resistor 72b is a current limiting device, not a voltage limiting device, as is now required by the claims. The rejection has been withdrawn.

Applicant's arguments with respect to claims 1, 11 and 19 have been considered but are not persuasive. Applicants argue that 1) Wirth does not disclose that the voltage clamping device is coupled between a pair of high voltage elements, and 2) Titterton does not disclose a voltage clamping device. The examiner respectfully disagrees.

First, with respect to Wirth, the examiner wishes to point out that the voltage clamping metal oxide varistor of Wirth is in fact coupled between high voltage elements: it is coupled to the cathode circuit between inductor 52, cathode 50 and grid 49.

Second, with respect to Titterton, the examiner asserts that the unlabeled resistor at the top of the Figure in Titterton inherently performs the function of a voltage clamping device, as explained in the above and previous rejections. Specifically, during normal operation, the voltage applied across the tube 24 will cause discharge between the cathode and anode, and the resistor will remain substantially non-conductive. However, in the event that a voltage spike takes place, the resistor will leak current proportional to the increase in voltage, thus maintaining a substantially constant voltage across the cathode and anode. The examiner also notes that the resistor is coupled between a pair of high-voltage elements, specifically the cathode and anode.

Furthermore, the examiner wishes to point out that the reference does not have to specifically disclose the intended use indicated by the independent apparatus claims (preventing occurrence of overvoltage transients in the cathode circuit) for the reference to anticipate the claimed invention. The device disclosed in the reference must only be able to perform the function, and it is the examiner's assertion that the unlabeled resistor of Titterton is able to perform the function, as explained in the previous paragraph.

Therefore, Applicants' arguments are not persuasive, and the rejections have been maintained above.

### *Conclusion*

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas R. Artman whose telephone number is (571) 272-2485. The examiner can normally be reached on 9am - 5:30pm Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Thomas R. Artman  
Patent Examiner



EDWARD J. GLICK  
SUPERVISORY PATENT EXAMINER